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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,054	09/28/2001	Fernando A. Mujica	TI-32182	4360
23494	7590	09/21/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			JOSEPH, JAISON	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/966,054

Applicant(s)

MUJICA, FERNANDO A.

Examiner

Jaison Joseph

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Claims 1 – 11 and 13 – 20 are pending in the instant application.

Applicant's arguments with respect to claims 1, 11 and 18 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

Claims 5 and 10 are objected to because of the following informalities:

Claim 5 line 4 recites "applying a medium operator" should have been "applying a median operator".

Similar scenario exist in claim 10, line 4.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 – 11 and 13 – 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in

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the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 and 11 recite the limitation “determining a peak average of plurality of data frames received by said analog front end”, however neither the written description nor the drawings show how to determine the peak average received by the analog front end. Figure one shows a digital signal processor (DSP) for controlling the programmable gain amplifiers (PGA) in an analog front end. Figure 1 further shows that the DSP is measuring the peak averages and controlling the gain of PGA. However, the specification does not show determining the peak average of a received signal.

Therefore, claims 1 and 11 failed to meet the enablement requirement.

Claims 2 – 10 and 13 – 17 are inherently rejected as being depend on rejected claims in above paragraph.

The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

Claim 15 is rejected under 35 U.S.C. 112, fourth paragraph, as failing to comply with further limit the subject matter claimed requirement. Claim 15 is reciting the a limitation claimed in claim 11 without further limiting said limitation.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6, 8, 11, 14, and 17 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kung et al. (US Patent 6,498,927) in view of Giebel (US Patent 6073848).

Regarding claim 1, Kung et al teach an analog front end with a plurality of interleaved gain and filter stages, comprising, selecting an order for gain stages to be considered, initializing each of said plurality of gain stages to respective minimal gain setting, wherein each gain stage has plurality of incremental gain settings, and for a first iteration of each gain stage in said selected order, increasing a corresponding gain setting by one increment, determining the peak of the signal for present gain setting, if the peak is greater than a peak target reduce said gain setting by one increment and proceed to next gain stage in said selected gain stage order, otherwise increase said gain setting by one increment and return to said act of determining the peak (see figure 8, and column 9, line 22 – column 10 line 37). Kung et al failed to disclose determining the peak average of a plurality of data frames received by the analog front end. However, Giebel teaches that determining the peak average of a plurality of data frames to control the gain settings (see column 1, line 59 – column 2, line 15). Therefore it would be obvious to an ordinary skilled in the art at the time the invention was made to use the peak average instead of peak of the signal to control the gain setting to reduce the impervious to short duration large excursions of the output voltage which otherwise would introduce large errors in receiver gain (see column 2, lines 16 – 19).

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Regarding claim 3, which inherits the limitations of claim 1, Kung et al teach that resetting a gain stage counter to begin with first gain stage in said selected (see column 12 lines 8 – 42).

Regarding claim 6, which inherits the limitations of claim 1, Kung et al teach second iteration of each gain stage in said selected order comprising increasing a maximum gain setting and repeating said first iteration of each gain stage (see column 9, line 22 – column 10, line 37).

Regarding claim 8, which inherits the limitations of claim 1, Kung et al teach subsequent iterations of each gain stage in said selected order comprising increasing a maximum gain setting and repeating said first iteration of each gain stage (see column 9, line 22 – column 10, line 37).

Regarding claim 11, claimed method including the features corresponding to subject matter mentioned above rejection of claim 1 is applicable hereto.

Regarding claim 14, which inherits the limitations of claim 11, claimed method including the features corresponding to subject matter mentioned above rejection of claim 6 is applicable hereto.

Regarding claim 17, which inherits the limitations of claim 11, claimed method including the features corresponding to subject matter mentioned above rejection of claim 8 is applicable hereto.

Regarding claim 18, claimed method including the features corresponding to subject matter mentioned above rejection of claim 6 is applicable hereto.

Regarding claim 19, which inherits the limitations of claim 18, Kung et al. teach gain stages comprise programmable gain amplifiers (see figure 8).

Regarding claim 20, which inherits the limitations of claim 18, Kung et al teach that the processor comprises a digital signal processor (see figure 8).

### ***Double Patenting***

Claims 1 and 11 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 17 of U.S. Patent No. 6,840,068 in view of Giebel (US Patent 6073848).

Although the conflicting claims are not identical, they are not patentably distinct from each other because both the claim 1 of instant application and claim 17 of patent claim a method for gain control in a digital subscriber line system with plurality of interleaves gain and filter stages, comprising selecting an order for said gain stages, initializing each of said plurality of gain stages to respective minimal gain setting, wherein each gain stage has a plurality of incremental gain settings; and for a first iteration each gain stages in said selected order, increasing a corresponding gain setting by one increment; and if gain is greater than a peak target, reduce said gain setting by one increment and proceed to next gain stage in said selected gain stage order; otherwise increase said gain setting by one increment. Claim 17 of the patent does not recite the limitation of determining the peak average of a plurality of data frames. However, Giebel teaches that determining the peak average of a plurality of data frames to control the gain settings (see column 1, line 59 – column 2, line 15).

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Therefore it would be obvious to an ordinary skilled in the art at the time the invention was made to use the peak average instead of peak of the signal to control the gain setting to reduce the impervious to short duration large excursions of the output voltage which otherwise would introduce large errors in receiver gain (see column 2, lines 16 – 19).

Regarding claim 11, claimed method including the features corresponding to subject matter mentioned above rejection of claim 1 is applicable hereto.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison Joseph whose telephone number is (571) 272-6041. The examiner can normally be reached on M-F 8:30 - 5.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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09/15/2005



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